High School Science Virtual Learning

Earth Science

Clouds and Precipitation

April 15, 2020

Earth Science
Lesson: Wednesday, April 15, 2020

Objective/Learning Target:

Students will understand Atmospheric Pressure.
Students will be able to identify the different types of clouds.

Bellwork: Answer in your notebook or a sheet of paper

Bellwork question 1

Which layer of Earth's atmosphere is responsible for destroying meteors?

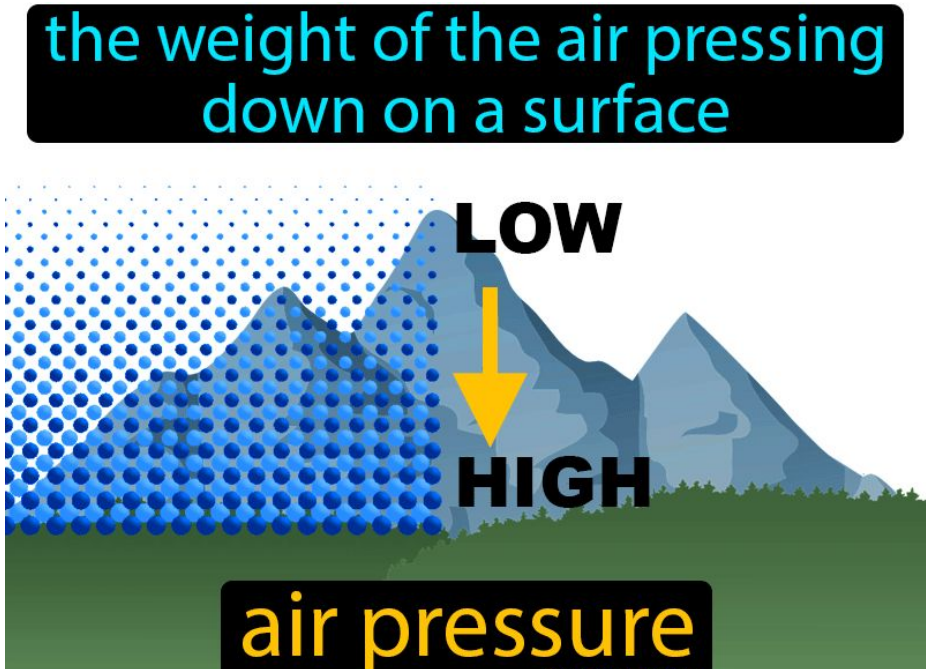
Bellwork question 2

What gases make up Earth's Atmosphere?

Did you know?

Did you know that Earth's atmosphere exerts a downward force on you due to the weight of the atmosphere above it?

That force is called **Air pressure**



Air Pressure and Temperature Relationship

As temperatures change, air pressure will change with it. You may have noticed this during various weather patterns.

When temperatures increase, air pressure will increase due to molecules of air spreading apart

When temperatures decrease, air pressure will also decrease due to molecules of air getting closer together.

Read the attached article to answer some questions about the effects of air pressure on the human body.

Barometric Air Pressure Effects on Humans

1) What happens to our sinuses when pressure changes occur?

2) What things can occur in the human body due to barometric pressure changes?

Key Vocabulary: Add these to your notebook or paper

Humidity: amount of water vapor in the atmosphere at a given location on Earth's surface

Saturation: occurs when the amount of water vapor in a volume of air has reached its maximum point

Relative Humidity: Amount of water vapor in a volume of air relative to the amount of water vapor needed to reach saturation (expressed as a percentage)

Dew Point: temperature to which air must be cooled at a constant pressure to reach saturation

Check your understanding….

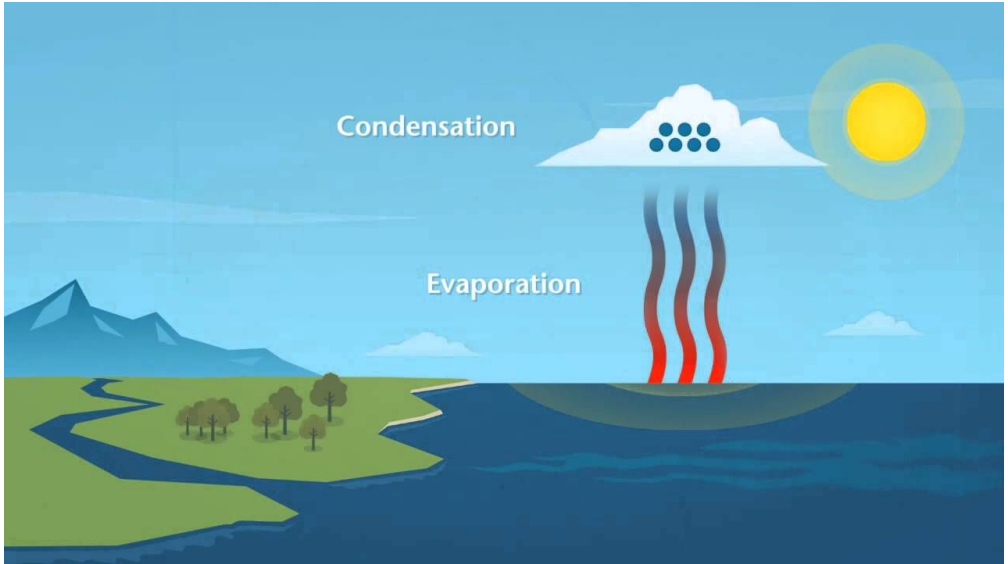
What happens to air pressure as you increase the temperature?

Why, do you think, relative humidity is given in a percentage?

Why do we need to know those terms?

These terms are all important in understanding how clouds and precipitation are formed!

Remember, as hot air rises, it will cool! This cooling will result in rain



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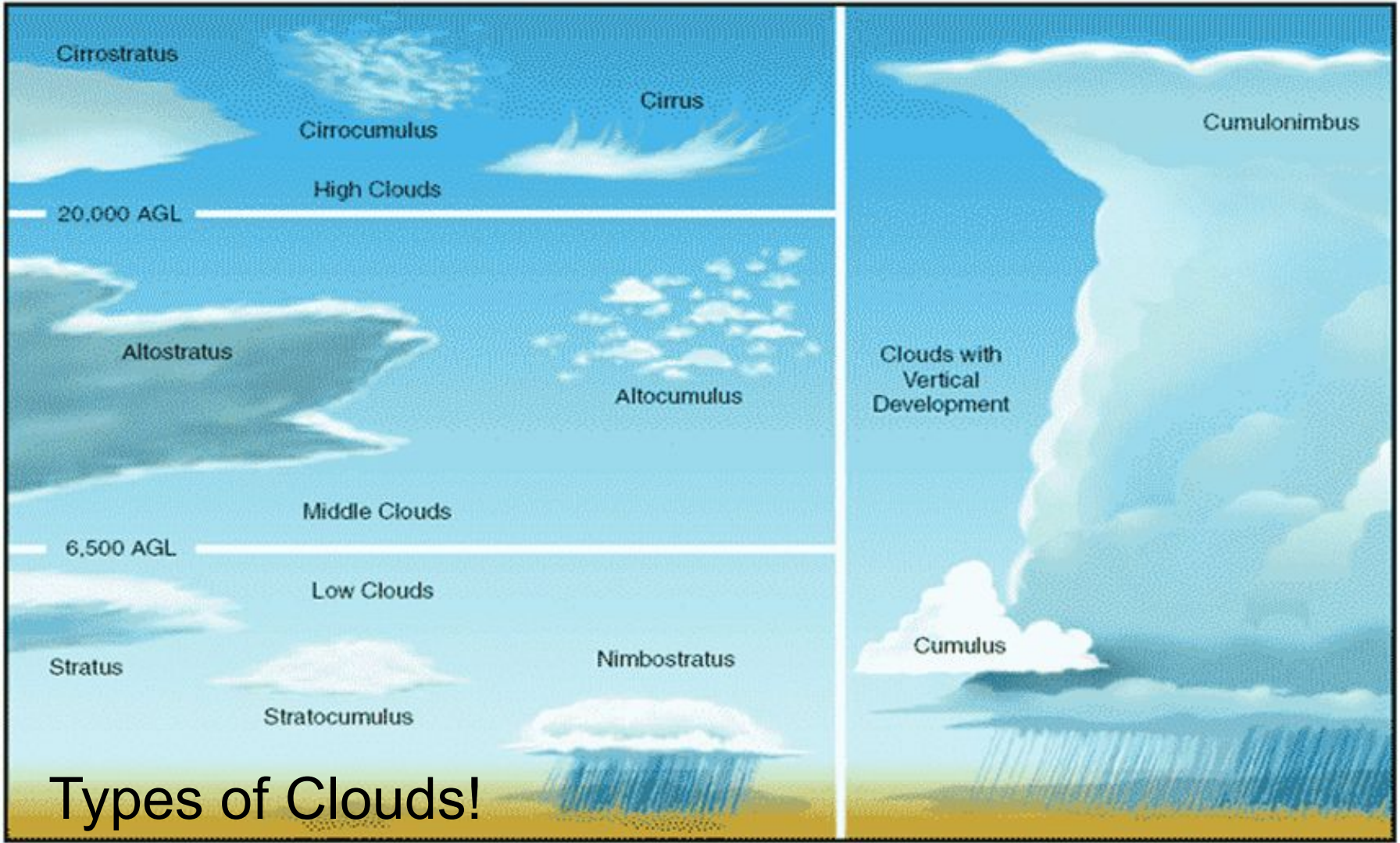

Types of Clouds!

Watch how clouds got their names!

Video

Answer the following Questions in your notebook or sheet of paper.

1) What were the 3 major groups of clouds called?

2) Using the diagram on the previous slide, what type of clouds produce precipitation?

Need some more help with understanding Clouds?

Click on this additional information powerpoint to assist in your understanding of clouds.

Clouds and their Characteristics

Identification Chart for Clouds

Cloud Chart

Answers:

Bellwork 1: The Mesosphere

Bellwork 2: Nitrogen, Oxygen, and other inert gases

Barometric Air Pressure Reading Questions:

1) Low pressure outside of the sinuses filled with air can cause headaches.

2) Migraines can occur due to pressure changes. Decreases in pressure could cause arthritis pain. This can also cause bubbles of air in the blood of people who were diving (the bends).

Check your understanding ANSWERS

What happens to air pressure as you increase the temperature?

-Air Pressure increases

Why, do you think, relative humidity is given in a percentage?

-This percentage tells how close air is to being completely saturated. Example: 50% relative humidity means it is halfway to being saturated.

How clouds get their names ANSWERS

Answer the following Questions in your notebook or sheet of paper.

1) What were the 3 major groups of clouds called?

Cirrus, Cumulus, Stratus

2) Using the diagram on the previous slide, what type of clouds produce precipitation?

Cumulonimbus, Nimbostratus